UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

August 9, 2011

Craig J. Ziady
Cummings Properties
200 West Cummings Park
Woburn, MA 01801-6396

Re: July 21, 2011 Meeting follow-up and Technical Review Comments for the former United Shoe Manufacturing Facility, 100 Cummings Center Beverly MA (MAD043415991, MassDEP RTN # 3-610)

Dear Mr. Ziady:

The U.S. Environmental Protection Agency-New England (EPA-NE) has completed a review of all the available documentation for the redeveloped Cumming Center (former USM site), including all documentation made available to us by Cumming Center Properties, the Mass DEP hard-copy and online files and all of the EPA-NE files, including CERCLA files.

The EPA-NE is tasked with final documentation that the two environmental indicators, Human Exposures Under Control and Migration of Contaminated Groundwater Under Control, have been achieved. In addition, the EPA-NE is tasked with documenting that a site wide remedy has been selected and implemented for the site. Our first and foremost concern is to evaluate and document that human exposures are under control.

The EPA-NE recognizes that a significant amount of site investigation and remediation has taken place and that an impressive redevelopment has been completed at the property. Conditions at a site like this may in fact be safe, but the EPA-NE considers it necessary to determine whether vapor intrusion is occurring. In 1993, Massachusetts became the first state in the country to establish regulations and cleanup standards for the assessment and cleanup of sites where vapor intrusion was a pathway of concern. Since then, much more has been learned about how volatile organic compounds in groundwater and soil migrate through the subsurface and volatilize into buildings. Guidance has been developed for the evaluation of this pathway and will be revised and updated as more is learned about this exposure pathway.

Regarding the site "closure" under the MCP - Although we acknowledge that each release tracking number (RTN) may have been adequately addressed under the MCP, this does not necessarily mean that the RCRA Corrective Action obligations have been met in their entirety. Please note that this facility falls within a group of sites that are subject to RCRA Corrective Action based on their historical management of hazardous waste.

General Comments

1. The suspected source area for soil vapor contamination beneath buildings 500/600 is the former ball field where it has been documented by Haley & Aldrich in the Phase II–Comprehensive Site Assessment (Phase II CSA), dated June 1991, and prior to that in the Preliminary Oil and Hazardous Material Site Evaluation, June 1988. The Phase II noted the following:

   "…the present-day ball field was used as a disposal site for a variety of materials associated with USM operations. This disposal included paint sludge, chemical waste from research, grinding swarth, foundry sand, and construction rubble. Chemical waste from the on-site research division was frequently (approximately daily) delivered by a 'chemical truck' to the disposal area. Operations burned all flammable materials as they were disposed, and it is understood that sometimes the material caught fire while being dumped because of chemical reactions."

2. We have only been able to locate one groundwater contour map for the site (1988). The ball field appears to be the closest, hydraulically upgradient area of concern to buildings 500/600 and therefore, may be a source of the soil vapor contamination.

   There is insufficient groundwater data for the former ball field area and the areas around building 500 and 600 to use groundwater as a line of evidence to evaluate the potential for vapor intrusion. The 1991 Phase II states that in the mid 1980's, 139 observation wells were installed and 148 groundwater samples collected. Approximately 9 groundwater samples from the ball field area were collected and screened in the field with a portable gas chromatograph. It does not indicate that any laboratory analysis was conducted on the ball field area groundwater samples. The only other groundwater monitoring event was conducted in 1995 and only one well was sampled in the vicinity of the former ball field for VOC and TPH (non-detect results).

3. Regarding applicable and relevant guidance and screening criteria for the evaluation of indoor air, we have used and quoted the EPA 2002 Vapor Intrusion Guidance, the MCP, and the MassDEP Indoor Air Sampling and Evaluation Guide (WSC Policy #02-430, April 2002). Regardless of what guidance is used, current, past or draft, available soil gas data exceeds applicable screening levels and we maintain that indoor air sampling should be conducted.

Technical Review of the 2006 Risk Assessment for AUL Modification at Buildings 500 and 600

General Comment

1. In correspondence from Geosphere on behalf of the Cummings Properties, dated July 13, 2011, the response states that all detected COCs were included in the risk assessment. This does not appear to be the case. There were four

compounds (hexane, trichlorofluoromethane, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene) that are classified as sufficiently volatile and toxic which were not included in the risk assessment. In addition, several COCs (some probable human carcinogens) were eliminated early on in the risk assessment process based on estimated indoor air concentrations (from soil gas sample results) being less than "background" indoor air concentration (discussed further below).

Specific Comments

Table 3

2. Bromodichloroethane should be bromodichloromethane, although it appears the attenuation factor for the later was used. This is not likely to change the outcome of the risk assessment.

Tables 4 and 5

3. The estimated indoor air concentrations are derived from the MassDEP MCP numerical standards spreadsheets dated Jan 2006. The attenuation factors (alpha) were multiplied by the soil vapor concentration to estimate an indoor air concentration. The use of these groundwater attenuation factors being applied to soil gas concentrations to calculate an exposure point concentration is questionable. These attenuation factors were calculated to develop the GW-2 standards or to estimate allowable groundwater concentrations.

4. The Johnson & Ettinger model, used to derive these attenuation factors, is based on an assumption that the capillary fringe is below the lowest level of the basement floor or building foundation slab. At the July 21st meeting, facility representatives stated that the reason soil vapor samples were collected adjacent to and not below the building slab was that groundwater was very shallow, the building 600 foundation slab was very thick and that it was not possible to collect sub-slab soil vapor samples because groundwater would have been contacted below the slab (i.e., the capillary fringe assumption does not hold).

5. Several COCs (acetone, chloroform, methylene chloride, methyl-ethyl-ketone, tetrachloroethylene, and1,1,1-trichloroethane) were eliminated from the risk assessment based on a comparison of the maximum detected concentration (with an attenuation factor applied) to the Residential Typical Indoor Air Concentration (MassDEP Residential Typical Indoor Air Concentrations, December 2008), not a comparison to "background" as stated in the risk assessment.[1] This is inappropriate for a risk assessment with such a limited amount of data. The EPA guidance recommends that all COCs should be carried through the risk assessment in order to understand the total risk. A discussion of the indoor air background concentrations should be provided in the uncertainty section. Further, these background concentrations are assumed to be the Typical

[1] Please note that MassDEP is using the term "Typical Indoor Air Concentrations" instead of "Indoor Air Background" to refer to the updated list of indoor air values. MassDEP is intentionally avoiding the term "background" as "background" has specific MCP regulatory associations that may not always be intended or apply when discussing the use of indoor air values from studies as a line of evidence in a vapor intrusion pathway investigation.

Indoor Air Concentrations (Mass DEP Technical Update December 2006) and not site-specific "background" concentrations.

Table 6

6. Reference concentrations and unit risk factors are not provided for several COCs, so many additional COCs were not carried through the risk assessment.

Additional AUL issues

7. We are still concerned about the very elevated concentration of 1,1,1-trichloroethane and no subsequent groundwater sampling to verify this result. As previously stated:

   "In an email dated 10/14/10, an explanation was provided as to why no groundwater remediation was necessary to address the 300 ppm of 1,1,1-trichloroethane detected in monitoring well BC1-OW, located in the vicinity of the chip grind shed. As stated in the October email, it is certainly possible that a laboratory or sampling error may have caused this "outlier," but laboratory reports and data validation results should be presented to support such a claim. There was no such claim identified in any of the subsequent reports that were reviewed."

Even though there is no day care currently in this suite, the last AUL modification does allow a school or daycare anywhere in the building. Indoor air sampling should also be conducted in all other schools and daycare facilities on the site and in any other locations prior to establishing any additional such facilities.

We acknowledge that significant work has been completed historically and numerous RTNs have achieved RAO status under the MCP. However, at this time, we request that you prepare and submit for review a work plan and quality assurance project plan to conduct at a minimum two rounds of indoor air testing in areas of the complex where schools and day care facilities are located. This testing will help to alleviate concerns related to vapor intrusion that arise from the technical comments provided within this letter. If you have further questions or comments please contact me at (617) 918-1617 or email (stfleur.marilyn@epa.gov).

Sincerely,

Marilyn St. Fleur

Marilyn St. Fleur
RCRA Corrective Action

cc: Maria Pinaud, MassDEP
Steve Johnson, MassDEP
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Stephen Drohosky, Cummings Properties